

CLAIMS

1. A method of forming a coating film on an aluminum substrate, comprising the steps of:

5 (1) coating an aluminum substrate with a thermosetting polyester resin lustrous powder base coating composition (a) containing a lustrous material, and baking the resulting base coat layer; and

10 (2) coating the base coat layer with a thermosetting acrylic resin clear powder coating composition (b), and baking the resulting clear coat layer to obtain a lustrous multilayer coating film.

15 2. A method of forming a coating film according to claim 1, wherein the lustrous material in the lustrous powder base coating composition (a) is at least one member selected from the group consisting of resin-coated aluminum flakes, colored aluminum flakes, mica, titanium metal flakes, alumina flakes, silica flakes, graphite, stainless steel flakes, platy iron oxide, 20 and micaceous iron oxide.

25 3. A method of forming a coating film according to claim 1, wherein the lustrous powder base coating composition (a) comprises a carboxyl-containing polyester resin as a base resin, and a β -hydroxyalkylamide as a crosslinking agent.

30 4. A method of forming a coating film according to claim 3, wherein the polyester resin is a polyester polycarboxylic acid resin having an acid value of about 10 to about 100 KOH mg/g of resin.

35 5. A method of forming a coating film according to claim 3, wherein the polyester resin is a polyester polycarboxylic acid resin having a weight average molecular weight of about 500 to about 50,000.

6. A method of forming a coating film according to
claim 3, wherein the polyester resin is a polyester
polycarboxylic acid resin having a softening temperature of about
5 50°C to about 140°C.

7. A method of forming a coating film according to
claim 3, wherein the ratio of β -hydroxyalkylamide to carboxyl-
containing polyester resin is such that the number of β -
10 hydroxyalkylamide hydroxyl groups is about 1.2 to about 1.6 per
polyester resin carboxyl group.

8. A method of forming a coating film according to
claim 1, wherein the clear powder coating composition (b)
15 comprises an epoxy-containing acrylic resin as a base resin, and
a polycarboxylic acid and/or anhydride thereof as a crosslinking
agent.

9. A method of forming a coating film according to
20 claim 8, wherein the epoxy-containing acrylic resin has an epoxy
equivalent of about 200 to about 800.

10. A method of forming a coating film according to
claim 8, wherein the epoxy-containing acrylic resin has a weight
25 average molecular weight of about 1,000 to about 10,000.

11. A method of forming a coating film according to
claim 8, wherein the epoxy-containing acrylic resin has a
softening temperature of about 50°C to about 140°C.

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12. A method of forming a coating film according to
claim 8, wherein the ratio of polycarboxylic acid and/or
anhydride thereof to epoxy-containing acrylic resin is such that
the total number of carboxyl groups and anhydride groups thereof
35 in the polycarboxylic acid and/or anhydride thereof is about 0.6

to about 0.9 per acrylic resin epoxy group.